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6 **IN THE UNITED STATES DISTRICT COURT**
7 **FOR THE DISTRICT OF ARIZONA**
8

9 Extremity Medical, LLC,

10 Plaintiff,

11 v.

12 Fusion Orthopedics, LLC,

13 Defendant.
14

No. CV-22-00723-PHX-GMS

ORDER

15
16 Pending before the Court are the parties' briefs addressing claim construction.
17 (Docs. 60, 63, 68). Also pending is Defendant Fusion Orthopedics, LLC's ("Fusion")
18 Motion for Leave to File Sur-Reply Regarding Claim Construction (Doc. 70). The Court
19 held a *Markman* Hearing on June 22, 2023, at which the parties presented additional
20 arguments. For the reasons set forth below, the Court makes the following constructions
21 and interpretations of the disputed claims. Further, Defendant's Motion for Leave
22 (Doc. 70) is denied.

23 **BACKGROUND**

24 **I. Parties and Underlying Lawsuit**

25 Extremity Medical, LLC ("Extremity") is a medical engineering company that designs,
26 manufactures, and sells surgical devices, specifically, "products for fusion, fixation and
27 motion-preserving systems for the upper and lower extremities of the human body,
28 including the hands and feet." (Doc. 1 at 4.) On April 12, 2022, the United States Patent

and Trademark Office (“USPTO”) issued U.S. Patent No. 11,298,166, entitled “Fixation System, an Intramedullary Fixation Assembly and Method [o]f Use” (the “166 Patent”). Extremity owns the 166 Patent and claims that Fusion, a medical device company founded by a former Extremity employee, has developed, sold, and manufactured an infringing product, its “IntraLock System.” Thus, Extremity filed a civil action for patent infringement in this Court on April 28, 2022.

II. 166 Patent

The 166 Patent is a three-piece surgical implant that stabilizes fractured bones and facilitates a healing process known as bone fusion (osteosynthesis), wherein broken bones “fuse” back together. The implant is drilled into the hollow middle of a patient’s bones (intramedullary, i.e., bone canal) after an injury or during other corrective bone surgery (osteotomy).

U.S. Patent Apr. 12, 2022 Sheet 19 of 20 US 11,298,166 B2

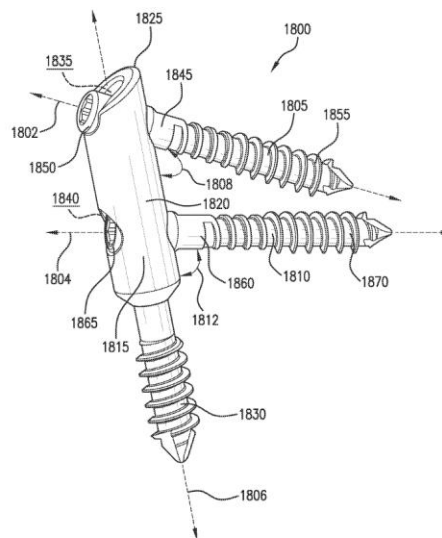


FIG. 18

The implant (depicted above) has two primary sections: a hollow cylindrical base with an opening at the top and a screw-like end. Together, these sections comprise the “third member” or “bone nail.” The third member’s screw-like end is inserted into a

1 patient's unbroken bone and is drilled until the opening at the top of the nail is near (or
 2 flush with) the bone's surface. The third member's hollow base has two holes. One hole
 3 is the opening at the top of the bone nail. A second hole runs perpendicularly through the
 4 side of the hollow base. The parties sometimes refer to these holes as boring holes or
 5 apertures.

6 Two bone screws (members) can be positioned through these holes and placed at
 7 different angles (boring angles) relative to the hollow base. The parties (and the relevant
 8 specification) refer to the top screw as "the first member" and the bottom screw as "the
 9 second member." The first member enters a patient's broken bone and secures a fracture.
 10 The second member also enters a bone and secures the third member to an unbroken bone;
 11 thus, the bottom screw is often called a "locking screw" because it stably aligns the bones
 12 in a fixed position until bone fusion occurs. (Doc. 63 at 6.) The first and second members
 13 each are made up of a base surrounded by a helical structure called a "thread." (Doc. 63
 14 at 12.)

15 In its Opening Brief, Extremity notes that the 166 Patent arose from U.S. Patent
 16 Application No. 17/323,923, which is related to a series of other patent applications. (Doc.
 17 60 at 7.) Two of these applications, U.S. Patent Application No. 15/884,048, and U.S.
 18 Patent Application No. 12/658,680, are relevant to the parties' proposed constructions and
 19 will be discussed in more detail below.

20 **III. Claims**

21 The parties dispute terms within Claims One and Twelve of the 166 Patent. The Claims
 22 are outlined below, and the disputed terms are underlined.¹ **Claim One** states:

23 The invention claimed is:

24 1. An assembly for bone fusion, comprising:

26 ¹ In the parties' Joint Claim Construction and Prehearing Statement, Fusion indicated that
 27 it planned to ask the Court to construe the term "torque transmitting aperture" as it appears
 28 in Claim Four. (Doc. 59 at 2.) Fusion withdrew this request in its Response. (Doc. 63 at
 6, n.1.)

1
2 a first member comprising a first elongated body extending from a
3 first end to a second end along a first longitudinal axis, wherein the
4 first member comprises a shaft portion having an external surface and
5 a head portion having an exterior surface, said first member further
6 comprising a first thread having a first thread height extending
7 radially outward from the external surface of said shaft portion;

8
9 a second member comprising a second elongated body extending from
10 a first end to a second end along a second longitudinal axis, wherein
11 the second member comprises a shaft having an external surface, said
12 second member further comprising a first thread having a first thread
13 height extending radially outward from the external surface of said
14 shaft;

15
16 a third member comprising a third elongated body extending along a
17 straight line from a first end to a second end along a third longitudinal
18 axis, wherein the third member comprises a first aperture at a terminal
19 end of the first end of the third elongated body, and a first bore
20 extending along a first bore axis from the first aperture to a second
21 aperture on an exterior surface of the third member, wherein the first
22 bore comprises an interior surface at the first aperture, wherein there
23 are no threads adjacent to the second aperture on the exterior surface
24 of the third member, and wherein the third longitudinal axis and the
25 first bore axis define a first angle,

26
27 wherein the third member further comprises a third aperture on the
28 exterior surface of the third member, and a second bore extending
along a second bore axis from the third aperture to a fourth aperture
on an exterior surface of the third member, wherein the third
longitudinal axis and the second bore axis define a second angle,

wherein the first member couples to the third member by inserting the
first end of the first member into the first aperture, through the first
bore, and out of the second aperture,

wherein the second member couples to the third member by inserting
the first end of the second member into the third aperture, through the
second bore, and out of the fourth aperture,

wherein the first angle is in the range of about 0 degrees to about 90
degrees,

1 wherein the second angle is in the range of about 0 degrees to about
2 90 degrees, and

3 wherein the second bore axis is substantially perpendicular to the third
4 longitudinal axis.

5 **Claim Twelve** states:

6 12. An assembly for bone fusion, comprising:

7 a first member comprising a first elongated body extending from a
8 first end to a second end along a first longitudinal axis, wherein the
9 first member comprises a shaft portion having an external surface and
10 a head portion having an exterior surface, said first member further
11 comprising a first thread having a first thread height extending
radially outward from the external surface of said shaft portion;

12 a second member comprising a second elongated body extending from
13 a first end to a second end along a second longitudinal axis, wherein
14 the second member comprises a shaft having an external surface, said
15 second member further comprising a first thread having a first thread
16 height extending radially outward from the external surface of said
shaft;

17 a third member comprising a third elongated body extending along a
18 straight line from a first end to a second end along a third longitudinal
19 axis, wherein the third member comprises a first aperture at a terminal
20 end of the first end of the third elongated body, and a first bore
21 extending along a first bore axis from the first aperture to a second
22 aperture on an exterior surface of the third member, wherein the first
23 bore comprises an interior surface at the first aperture, wherein there
24 are no threads adjacent to the second aperture on the exterior surface
25 of the third member, and wherein the third longitudinal axis and the
26 first bore axis define a first angle,

27 wherein the third member further comprises a third aperture on the
28 exterior surface of the third member, and a second bore extending
along a second bore axis from the third aperture to a fourth aperture
on an exterior surface of the third member, wherein the third
longitudinal axis and the second bore axis define a second angle,

wherein the first member couples to the third member by inserting the
first end of the first member into the first aperture, through the first

bore, and out of the second aperture,

wherein the second member couples to the third member by inserting the first end of the second member into the third aperture, through the second bore, and out of the fourth aperture,

wherein the second angle is in the range of about 0 degrees to about 90 degrees, and

wherein the second bore axis is substantially perpendicular to the third longitudinal axis.

DISCUSSION

I. Motion for Leave

Fusion moves for leave to file a sur-reply (Doc. 70). “A sur-reply is appropriate when a party raises new issues or new evidence in a reply brief.” *ML Liquidating Trust v. Mayer Hoffman McCann P.C.*, 2011 WL 10451619, at *1 (D. Ariz. Mar. 11, 2011). Courts “only allow for sur-replies in the most extraordinary of circumstances,” as sur-replies “are generally discouraged as they usually are a strategic effort by the nonmoving party to have the last word on a matter.” *Briggs v. Montgomery*, No. CV-18-02684-PHX-EJM, 2019 WL 13039282, at *2 (D. Ariz. Mar. 19, 2019) (citing *id.*). Here, Fusion alleges that the “requested Sur-Reply is necessary” to respond to “new evidence set forth for the first time in Extremity’s Reply Claim Construction Brief . . . including an expert declaration submitted by Extremity and selected portions of Fusion’s expert’s deposition testimony that is mischaracterized by Extremity in its Reply Brief.” (Doc. 70 at 2.)

In its Reply, Extremity repeatedly cites the declaration of a previously undisclosed expert, Mr. Eric Ledet. (*See* Doc. 68 at 6–8, 10–15.) Fusion had no opportunity to depose Mr. Ledet before the *Markman* hearing. Mr. Ledet’s statements primarily concern how people of ordinary skill in the relevant art would understand specific claim terms. (*See* Doc. 68 at 6–8, 10–15.) Each of his statements, however, is responsive to matters raised in Defendant’s Response or by Fusion’s technical expert’s testimony. The declaration does not advance any new arguments. *Sekera v. Allstate Ins. Co.*, 763 F. App’x 629, 632 (9th

1 Cir. 2019) (“The district court did not err in denying Sekera’s request because Allstate did
 2 not introduce new arguments in its reply to warrant the sur-reply.”) (cleaned up). Further,
 3 as the analysis below will indicate, Mr. Ledet’s declaration had a di minimis effect on the
 4 Court’s ultimate constructions. Thus, allowing Fusion to respond to Mr. Ledet’s
 5 declaration would not be “helpful to the resolution” of the currently pending matters.
 6 *Liberty Corp. Cap. Ltd. v. Steigleman*, No. CV-19-05698-PHX-GMS, 2020 WL 2097776,
 7 at *1 (D. Ariz. May 1, 2020) (noting that a district court must consider whether a sur-reply
 8 would be helpful to resolve pending matters).

9 To the extent that Fusion’s motion seeks leave to address mischaracterizations of
 10 “selected portions of Fusion’s expert’s deposition testimony,” it is also denied. The Court
 11 had access to the relevant transcripts and considered them carefully. It did not unthinkingly
 12 embrace Extremity’s characterizations in reaching its final constructions. Of particular
 13 importance here, Fusion had an opportunity to discuss these concerns at the *Markman*
 14 hearing. At that time, Fusion adequately explained its claim construction arguments and
 15 expressed its position on Mr. Ledet’s declaration. After considering those positions and
 16 other arguments outlined in Defendant’s Motion, Fusion does not allege the extraordinary
 17 circumstances that warrant leave to file a sur-reply. This result does not prejudice the
 18 parties. *Id.* (noting that a district court must consider prejudice to the nonmovant in
 19 determining whether to grant a motion for leave to file a sur-reply).

20 Accordingly, Defendant’s Motion for Leave (Doc. 70) is denied.

21 **II. Claim Construction**

22 **a. Legal Standard**

23 Claim construction is the first step in patent infringement analysis. *See Markman*
 24 *v. Westview Instruments, Inc.*, 517 U.S. 370, 372–74 (1996). Its purpose is to “determin[e]
 25 the meaning and scope of the patent claims asserted to be infringed.” *Markman v. Westview*
 26 *Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff’d* 517 U.S. 370 (1996).
 27 If a disputed claim term has a plain and ordinary meaning that needs no clarification or
 28 explanation, the Court need not adopt a construction beyond that plain meaning. *Clim-A-*

1 *Tech Indus. Inc. v. Ebert*, No. CV-15-00873-PHX-GMS, 2018 WL 1182549, at *2 (D.
2 Ariz. Mar. 7, 2018) (citing *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed.
3 Cir. 1997)). The general rule is that the ordinary meaning of a claim term is the meaning
4 the term would have to a person of ordinary skill in the art (“POSITA”), read “not only in
5 the context of the particular claim in which the disputed term appears, but in the context of
6 the entire patent.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). Claim
7 construction is exclusively within the province of the Court. *Markman*, 517 U.S. at 372.

8 When construing claim terms, courts look first (and primarily) to intrinsic evidence,
9 including the patent’s claims, specification, and prosecution history. *Ericsson, Inc. v.*
10 *D-Link Sys., Inc.*, 773 F.3d 1201, 1217 (Fed. Cir. 2014). The claims’ language provides
11 substantial guidance as to the meaning of the terms but must be read in light of the
12 specification. *Phillips*, 415 F.3d at 1313 (“[T]he specification is always highly relevant to
13 the claim construction analysis.”) (internal punctuation omitted). Likewise, prosecution
14 history, which “consists of the complete record of the proceedings before the [Patent
15 Office] and includes the prior art cited during” the patent’s examination “provides evidence
16 of how the [Patent Office] and the inventor understood the patent.” *Id.* at 1317. Courts
17 also consider statements made during the prosecution of related patents. *See, e.g., E.I. du*
18 *Pont de Nemours & Co. v. Unifrax I LLC*, 921 F.3d 1060, 1068–70 (Fed. Cir. 2019)
19 (citations omitted) (citing *Wang Labs., Inc. v. Am. Online, Inc.*, 197 F.3d 1377, 1383–84
20 (Fed. Cir. 1999)).

21 Extrinsic evidence, like expert testimony or dictionaries, may also be considered in
22 claim construction. For example, expert testimony can help explain any relevant
23 background or understand how relevant POSITAs would understand the terms at issue.
24 *Phillips*, 415 F.3d at 1313. However, extrinsic evidence is generally viewed as less reliable
25 than intrinsic evidence and, thus, is considered less “unlikely to result in a reliable
26 interpretation of patent claim scope unless considered in the context of the intrinsic
27 evidence.” *Id.* at 1318–19.

b. Construction of Disputed Terms

i. Term One: “a third member comprising a third elongated body extending along a straight line from a first end to a second end along a third longitudinal axis.”

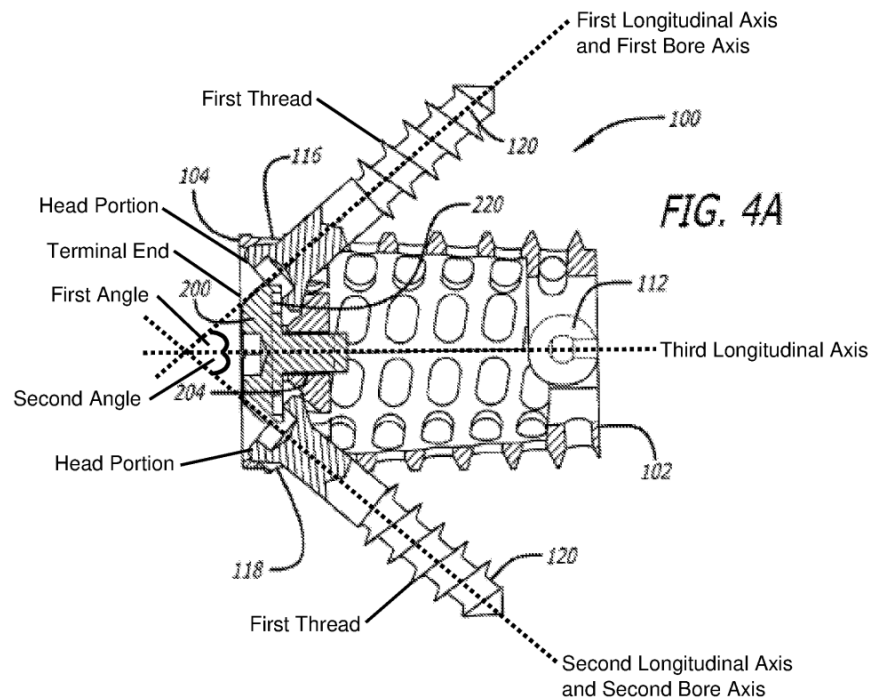
Claims One and Twelve state that the 166 Patent has “a third member comprising a third elongated body extending along a straight line from a first end to a second end along a third longitudinal axis.” (Doc. 60-2 at 33, c.15, 11:13); (Doc. 60-2 at 33, c.16, 24:26.) Extremity asks the Court to construe “extending along a straight line from a first end to a second end” to mean “wherein the [third] member extends along a straight line from a first end to a second end.” (Doc. 60 at 11.) Fusion objects to this construction because it “would require the entire third member to extend along a straight line,” when the claims’ language only requires a “portion of the third member called the ‘third elongated body’ to extend along a straight line.” (Doc. 63 at 15.)

First, the Court considers the claims’ text. According to Claims One and Twelve, the “third elongated body” extends from “a first end” to “a second end.” Under Extremity’s construction, the distance between the “first end” and the “second end” is the entire length of the third member. Fusion notes that the claims’ text does not explicitly define the distance between the ends. Contrary to Fusion’s position, however, the text also fails to explicitly limit “a third elongated body” to any portion of the third member.

Next then, the Court turns to the specification. While “[t]he specification is the primary basis for claim construction and the best source for understanding a technical term in the proper context,” it is not particularly useful in this instance. *Clim-A-Tech Indus. Inc. v. Ebert*, No. CV-15-00873-PHX-GMS, 2018 WL 1182549, at *3 (D. Ariz. Mar. 7, 2018). Figure 18 depicts a third member consisting of two primary sections—a hollow base and a screw-like end—and a longitudinal axis extending beyond the third member’s edges. It does not label the third member (or any portion of the third member) as “a third elongated body.”

Thus, the Court considers the relevant prosecution history. During the prosecution of U.S. Patent Application No. 15/884,048 (“048 Application”), an application to which the 166 Patent claims priority, Extremity made a disclaimer that limits Term One to its proposed construction. A disclaimer allows a court to deviate from the general rule that claim terms should be given their ordinary meaning (as understood by a POSITA) when “the patentee disavows [or “disclaims”] the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Importantly, “prosecution disclaimer may arise from disavowals made during the prosecution of ancestor patent applications.” *Ormco*, 498 F.3d at 1314 (citing *Raytek Corp.*, 334 F.3d at 1333).

The 166 Patent is a continuation of the 048 Application, which depicted the following device:



During the 048 Application’s prosecution, an Examiner initially rejected Extremity’s second claim as anticipated by U.S. Patent Publication No. 2006/0149257 (“Orbay Patent”). In relevant part, Claim Two stated that the device depicted in Figure 4A

1 had “a third member (implant 100) comprising a third elongated body extending from a
 2 first end (trailing end 104) to a second end (leading end 102) along a third longitudinal axis
 3 (see Fig. 4A inset)” (Doc. 60-3 at 6.) The Examiner found this language was
 4 anticipated by the Orbay Patent, which also disclosed “a third member (device 10)
 5 comprising a third elongated body extending from a first end (end adjacent hole 22) to a
 6 second end (end adjacent portion 46) along a third longitudinal axis. . . .” (Doc. 60 at 12
 7 (citing Doc. 60-3 at 10).) Device 10 is depicted below:

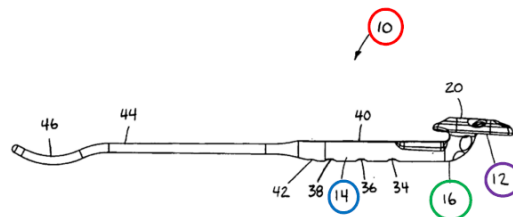


FIG. 1

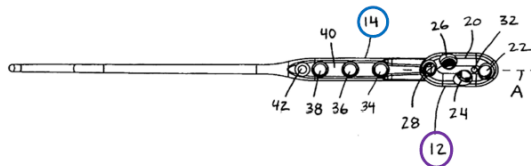


FIG. 2

19 In light of the Examiner’s rejection, Extremity amended Claim Two to reflect the
 20 language it requests here: “a third member comprising a third elongated body **extending**
 21 **along a straight line** from a first end to a second end along a third longitudinal axis. . . .”
 22 (See Doc. 60 at 10 (citing Doc. 60-5 at 3) (emphasis in the original).) The remarks
 23 accompanying Extremity’s proposed amendment specifically distinguished the device
 24 depicted in Figure 4A from the Orbay Patent by noting that “Device 10 disclosed in Orbay
 25 does not extend along a straight line from a first end to a second end,” and, instead, “bends
 26 along [the] neck portion.” (Doc. 60-5 at 8.) The Examiner did not sustain the initial
 27 rejection.

28 As an initial matter, “[e]xplicit statements made by a patent applicant during

1 prosecution to distinguish a claimed invention over prior art may serve to narrow the scope
 2 of a claim.” *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003)
 3 (citing *Spectrum Int’l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378 (Fed. Cir. 1998)). And
 4 when “the application of prosecution disclaimer involves statements from prosecution of a
 5 familial patent relating to the same subject matter as the claim language at issue in the
 6 patent being construed, those statements in the familial application are relevant in
 7 construing the claims at issue.” *Ormco*, 498 F.3d at 1314.

8 The amended language in Claim Two is identical to the language in Term One.
 9 (*Compare* Doc. 60-5 at 2 *with* Doc. 60 at 10.) And, like the third member disclosed in the
 10 166 Patent, the third member disclosed in the 048 Application is entirely straight. (Doc.
 11 60-3 at 9.) Of particular relevance here is that Claim Two’s language explicitly described
 12 the third member’s “third elongated body” as extending “from a first end (trailing end 104)
 13 to a second end (leading end 102).” According to the labeling on Figure 4A, the distance
 14 between those points is the entire length of the third member, not any particular portion.
 15 By noting that a “third elongated body” extended “along a straight line,” Extremity limited
 16 the scope of the phrase “a third elongated body extending along a straight line from a first
 17 end to a second end” to its proposed construction for Term One, i.e., “wherein the [third]
 18 member extends along a straight line from a first end to a second end.”

19 Nevertheless, Fusion argues that the Court should not adopt Extremity’s
 20 construction because the figures from the Orbay patent “clearly show an intramedullary
 21 nail [] that extends along a straight line for a portion of the nail (third elongated body).”
 22 (Doc. 63 at 16.) However, it is unclear how this point undermines Extremity’s proposed
 23 construction. By amending Claim Two to include the phrase “extending along a straight
 24 line,” Extremity differentiated the third elongated body on the Orbay device, which was
 25 only partially straight, from the third elongated body disclosed in Figure 4A, which was
 26 entirely straight.

27 Accordingly, the Court adopts Extremity’s construction of Term One.

28 *ii. Term Two: “terminal end”*

The phrase “terminal end” appears in Claims One and Twelve as part of a larger clause: “wherein the third member comprises a first aperture at a terminal end of the first end of the third elongated body.” (Doc. 60-2 at 33, c.15, 13:14); (Doc. 60-2 at 33, c.16, 26:28 (emphasis added).) Extremity asks the Court to construe “terminal end” to mean “the very tip” because of an alleged disclaimer it made during the prosecution of another patent application to which the 166 Patent claims priority, U.S. Patent Application No. 12/658,680 (“680 Application”). The 680 Application included Claims One and Fifty-One, which described “a second screw member” that “includes a second elongated body having first and second ends,” comprising in part “a first aperture at a terminal end of the second end of the second elongated body.” (Doc. 60-6 at 2, 11.)

Initial Rejection of Terminal End. In rejecting these claims, the Examiner noted the specification did not comply with the written description requirement under 35 U.S.C. § 112, because it failed to support “a terminal end,” among other claim terms. (Doc. 60-6 at 19). Extremity responded by explaining that “a ‘terminal end’ is ‘disclosed as end 1120 shown in Figure 11 and described in paragraph [0060].’” (*Id.*).

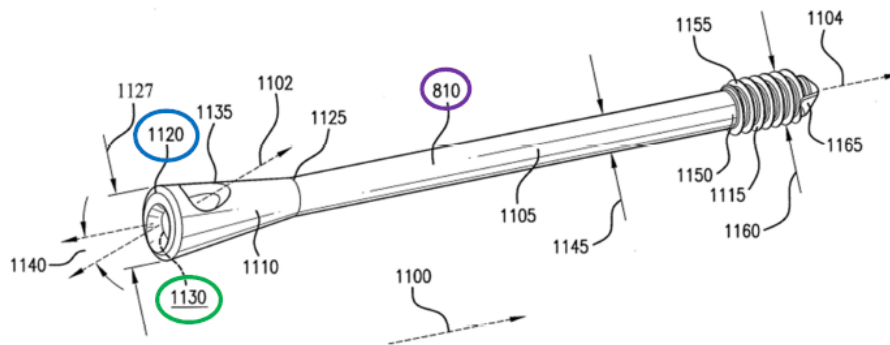


FIG. 11

In the description accompanying Figure 11, Extremity identified a “tapered portion 1110” that is “generally tubular in shape and tapers from end 1120 to end 1125.” (Doc.

60-8 at 27.) It further noted that “first end 1120 has a tapered aperture 1130, which traverses tapered portion 1110 along axis 1102, which causes tapered aperture 1130 to emanate from surface 1135.” (*Id.*) The Examiner withdrew the rejection.

Chang Patent. At another point in the prosecution, “the Examiner cited U.S. Patent Publication No. 2009/0240252 (“Chang Patent”) as a prior art reference that disclosed the claimed inventions.” (Doc. 60 at 16 (citing Doc. 60-7 at 8–13.)) Figure 5 depicts the Chang Patent:

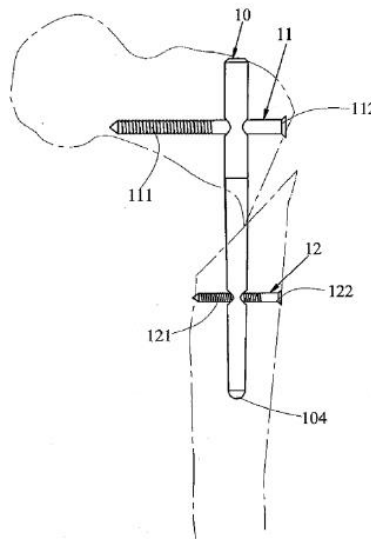


FIG. 5

To distinguish the 680 Application from the Chang Patent, Extremity noted that Figure 5 only disclosed holes “along the shaft of the nail.” (Doc. 60 at 17 (citing Doc. 60-6 at 20).) The Chang Patent did “not discuss or disclose a structure having an aperture at a terminal end of the nail.” (Doc. 60 at 17 (citing Doc. 60-6 at 20–21).)

Analysis. Neither the initial rejection nor the Chang Patent disclaimers support construing “terminal end” as “the very tip.” The Examiner’s initial rejection demonstrates that “1120” is the member’s terminal end with “tapered aperture 1130.” But Extremity never used the words “the very tip” to describe the portions of the device labeled at 1120

1 and 1130. Further, while Extremity’s description of the Chang Patent also supports its
 2 position that 1120 is the member’s “terminal end” with a tapered aperture, it also did not
 3 describe 1120 or 1130 as the member’s “very tip.” Together, the initial rejection and the
 4 Chang Patent suggest that portion 1120 is the device’s “terminal end,” but they do not
 5 support calling that end “the very tip.” As Fusion notes, “the word ‘tip’ . . . appears nowhere
 6 in the file history statements on which Extremity relies,” (Doc. 63 at 13), and a POSITA
 7 might understand “the very tip” to mean “the pointed end that is inserted into the bone
 8 first,” (Doc. 63 at 14).

9 After reviewing the parties’ briefings and representations from the *Markman*
 10 hearing, the Court is persuaded that a POSITA would understand that the 166 Patent’s
 11 “terminal end” is the open end of the third member’s hollow base.

12 Accordingly, the Court rejects Extremity’s proposed construction and declines to
 13 construe Term Two.

14 *iii. Term Three: a “first member further comprising a first*
 15 *thread having a first thread height” and a “second member*
 16 *further comprising a first thread having a first thread*
 17 *height.”*

18 Claims One and Twelve describe a “first member further comprising a first thread
 19 having a first thread height” and a “second member further comprising a first thread having
 20 a first thread height.” (Doc. 60-2 at 33, c.15, 1:3, 8:9); (Doc. 60-2 at 33, c.16, 12:14, 19:21.)
 21 Fusion asks the Court to construe these terms as “the first thread height is the same for the
 22 first thread of the first member and the first thread of the second member.” Extremity
 23 opposes this construction as contrary to “accepted claim drafting principles.” (Doc. 60
 24 at 18.)

25 The Court starts with the claims’ text. Generally, “the introduction of a new element
 26 is accomplished through the use of an indefinite article,” such as “a” or “an,” and “not
 27 through the use of a definite article,” such as “the.” *Tuna Processors, Inc. v. Haw. Int’l*
 28 *Seafood, Inc.*, 327 F. App’x 204, 210 (Fed. Cir. 2009). For example, in *Tuna Processors*,
 a claim described a multi-step process for curing tuna fish. The first step included “passing

1 the produced smoke through a filter,” the second step required “cooling the smoke passed
2 through the filter,” and the third step involved smoking the tuna by exposing it “to the
3 smoke cooled to between 0° and 5° C.” *Id.* at 206. A party in that case alleged that “the
4 smoke” mentioned in the third step was distinct from “the smoke” mentioned in previous
5 steps. *Id.* at 210. However, the Federal Circuit rejected that construction by noting that
6 “the definitive article THE is used to refer to an ELEMENT which has been established
7 earlier in a claim.” *Id.* (quoting Robert C. Faber, *Faber on Mechanics of Patent Claim*
8 *Drafting*, App. D–1 (6th ed. 2008) (capitalization in the original)). Thus, “the smoke” in
9 step three was the same as “the smoke” in steps one and two. Under this general drafting
10 principle, the indefinite articles preceding “a first thread” and “a first thread height” suggest
11 that the terms refer to distinct threads and thread heights even though their wording is
12 identical.

13 However, Fusion suggests that other drafting principles cut against this conclusion.
14 For example, “claim terms are normally used consistently throughout the patent” so that
15 “the usage of a term in one claim can often illuminate the meaning of the same term in
16 other claims.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005). And, as
17 Fusion notes, throughout Claims One and Twelve, “[t]he patent owner chose to use terms
18 like first, second, and third to refer to different structures or components, such as first
19 member, second member and third members.” (Doc. 63 at 13.) Thus, according to Fusion,
20 the patent owner would similarly refer to “first” and “second” thread heights if the thread
21 heights were different. Fusion further claims that Figure 18, “which shows both screws
22 with the same thread height,” also supports this conclusion. (Doc. 63 at 13.)

23 On balance, Fusion’s arguments are unpersuasive for three reasons. First, “no
24 portion of the ‘166 Patent[’s] [specification] indicates that the thread heights of the two
25 members are the same.” (Doc. 68 at 8–9.) Second, “it is improper to read limitations from
26 a preferred embodiment described in the specification—even if it is the only
27 embodiment—into the claims absent a clear indication in the intrinsic record that the
28 patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358

1 F.3d 898, 913 (Fed. Cir. 2004). Fusion points to no such indication.

2 Third, and most importantly, Extremity's use of indefinite and definite articles
3 throughout the 166 Patent's specification appears consistent with the drafting principle
4 mentioned above. Wherever an assembly component is modified by an ordinal term in
5 Claims One and Twelve, the text introduces the component with indefinite articles, such
6 as "a first member," (Doc. 60-2 at 32, 14:63), "a second aperture," (Doc. 60-2 at 33, 15:17),
7 or "a third longitudinal axis," (Doc. 60-2 at 33, 15:13). When the assembly component is
8 mentioned a second time, it is always referenced with a definite article, such as the "the
9 first member," (Doc. 60-2 at 32, 14:65), "the second aperture," (Doc. 60-2 at 32, 15:20),
10 or "the third longitudinal axis," (Doc. 60-2 at 32, 14:21).

11 Accordingly, the Court rejects Fusion's proposed construction for Term Three.

12 **iv. Indefiniteness**

13 The parties do not seek any further claim construction. Instead, Fusion argues that
14 the remaining terms are indefinite. The Patent Act requires a patent specification to
15 "conclude with one or more claims particularly pointing out and distinctly claiming the
16 subject matter which the applicant regards as [the] invention." 35 U.S.C. § 112; *Nautilus*,
17 *Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). Thus, "a patent is invalid for
18 indefiniteness if its claims, read in light of the specification delineating the patent, and the
19 prosecution history, fail to inform, with reasonable certainty, those skilled in the art about
20 the scope of the invention." *Nautilus*, 572 U.S. at 901. "'Reasonable certainty' does not
21 require 'absolute or mathematical precision.'" *BASF Corp. v. Johnson Matthey Inc.*, 875
22 F.3d 1360, 1365 (Fed. Cir. 2017). Nevertheless, "[a] lack of definiteness renders invalid
23 'the patent or any claim in suit,'" *Nautilus*, 572 U.S. at 902, and a patent challenger has the
24 "burden of proving indefiniteness by clear and convincing evidence," *United Access*
25 *Techs., LLC v. AT&T Corp.*, 757 F. App'x 960, 9699 (Fed. Cir. 2019).

- 26 1. *Terms Four and Five*: "wherein the first angle is in the range
27 of about 0 degrees to about 90 degrees"/ "wherein the second
28 angle is in the range of about 0 degrees to about 90 degrees."

1 Claim One contains the term “wherein the first angle is in the range of about 0
 2 degrees to about 90 degrees.” (Doc. 60-2 at 33, c.15, 38:39.) Claims One and Twelve
 3 contain the term “wherein the second angle is in the range of about 0 degrees to about 90
 4 degrees.” (Doc. 60-2 at 33, c.15, 41:42); (Doc. 60-2 at 33, c.16, 53:54.) Fusion alleges
 5 these terms are indefinite because “a range of ‘about 0 degrees to about 90 degrees’ for
 6 angles between two axes [] is too broad of a range to adequately describe the invention.”
 7 (Doc. 63 at 9.) Fusion also alleges that because the angles are defined by the two axes they
 8 intersect, the claims could refer to any one of four angles, and, thus, “there is no way to tell
 9 which angle is referred to in the claims.” (*Id.* (noting that the first angle is defined by the
 10 “third longitudinal axis and the first bore axis,” and the second angle is defined by the
 11 “third longitudinal axis and the second bore axis.”).) The former allegation is easily refuted
 12 by Figure 18, which clearly labels the relevant angles at 1808 and 1812, respectively. There
 13 is thus no legitimate confusion about which angles are referred to in Claims One or Twelve.
 14 The latter allegation, however, requires more consideration.

15 Fusion’s technical expert testified that if the first or second angles were oriented at
 16 near 0 degrees, they would be parallel with the third member and, thus, would not serve
 17 any useful purpose. (Doc. 68-3 at 19, 1:2 (“[A]t 0 degrees nothing much is happening. All
 18 you have is a nail with no screws.”).) He further testified that if the first or second angles
 19 were at or near 5 degrees, the device would also not serve a useful purpose because “if you
 20 try to compress something at a very acute angle all you’re really doing is creating some
 21 tilting or rotation of the bone fragment and not really good perpendicular compression bone
 22 on bone.” (Doc. 68-3 at 19, 11:12 (“[The assembly] would not be an effective capture of
 23 any bone at five degrees.”).) Likewise, Fusion’s expert noted that if the first member were
 24 positioned at 90 degrees, “the body of the screw would be extremely close to the outer
 25 surface of the bone and not provide proper quality fracture fixation.” (Doc. 63 at 10); (Doc.
 26 68-3 at 21, 8:9 (“[I]t’s possible you could use it at 90 degrees, but you certainly
 27 wouldn’t”).) According to Fusion, these observations provide clear and convincing
 28 evidence that the Terms are indefinite because for “a person skilled in the art, the claimed

1 value of near 0 degrees and near 90 degrees would have no practical use or significance for
2 the device to perform as intended.” (Doc. 63 at 10.)

3 Even accepting these observations, the Terms are not indefinite. Ultimately, the
4 ranges are expressed in terms of degree, which have “long been found definite where [they]
5 provided enough certainty to one of skill in the art when read in the context of the
6 invention,” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014),
7 and provide “some standard for measuring that degree,” *Advanced Aerospace Techs., Inc.*
8 *v. United States*, 124 Fed. Cl. 282, 291 (2015). Here, Fusion’s expert admits that in the
9 context of the assembly, a device for facilitating healing after bone fractures, a POSITA
10 would “have a very good idea of what the angle of the projected screw should be for that
11 particular nail and the particular fracture pattern.” (Doc. 68-3 at 18, 1:3.) And the standard
12 for measuring the degree of that angle is “about 0 to 90 degrees,” which “provide[s]
13 objective boundaries for those of skill in the art.” *Liberty Ammunition, Inc. v. United*
14 *States*, 835 F.3d 1388, 1396 (Fed. Cir. 2016).

15 Further, the word “about” does not render the Terms indefinite. Although “‘about’
16 does not have a universal meaning in patent claims,” *Pall Corp. v. Micron Separations,*
17 *Inc.*, 66 F.3d 1211, 1217 (Fed. Cir. 1995), precise limits need not “always be attached to
18 the term” because its “usage can usually be understood in light of the technology embodied
19 in the invention,” “the context,” and “the precision or significance of the measurements
20 used.” *Zoltek Corp. v. United States*, 48 Fed. Cl. 290, 300 (2000). In this context, the 166
21 Patent’s specification notes that the assembly is useful in many cases because it allows
22 surgeons to adjust the first and second angles to secure specific fractures. (*See, e.g.*, Doc.
23 60-2 at 13:45–50 (“It should be appreciated that fixed angles 1808 and 1812 may be any
24 angle less than 90 degrees to allow a surgeon the flexibility of determining the angle for
25 internal fixation of bones in the human body.”).) While the angle measurement a surgeon
26 uses in one operation will be precise and significant in the context of that fracture, it might
27 not be relevant in any future operations. Thus, Extremity’s use of “about 0 degrees to about
28 90 degrees” is appropriate here because the word “about” specifically “avoids a strict

1 numerical boundary to the specified parameter” to provide surgeons with flexibility. *Pall*,
 2 66 F.3d at 1217 (Fed. Cir. 1995).

3 Accordingly, Fusion has not provided clear and convincing evidence that Terms
 4 Four and Five are indefinite, and the Court will not construe them.

5
 6 2. *Term Six: “wherein the second bore axis is*
 7 *substantially perpendicular to the third longitudinal*
 8 *axis.”*

9 Claims One and Twelve state, “wherein the second bore axis is substantially
 10 perpendicular to the third longitudinal axis.” (Doc. 60-2 at 33, c.15, 43:44); (Doc. 60-2 at
 11 33, c.16, 53:54.) Fusion asks the Court to find the term “substantially perpendicular”
 12 indefinite. Like the word “about,” the word “substantially” is a term of degree, which, in
 13 this context, is used to “avoid a strict numerical boundary to the specified parameter.”
 14 *Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367 (Fed. Cir. 2001); *see also Cordis*
 15 *Corp. v. Medtronic Ave*, 339 F.3d 1352, 1360 (Fed. Cir. 2003) (“The patents do not set out
 16 any numerical standard by which to determine whether the thickness of the wall surface is
 17 ‘substantially uniform.’ The term ‘substantially,’ as used in this context, denotes
 18 approximation.”). The word “perpendicular” means “at an angle of 90° to
 19 a horizontal line or surface.” *Perpendicular*, Cambridge Dictionary,
 20 <https://dictionary.cambridge.org/us/dictionary/english/perpendicular> (last visited June 30,
 21 2023). Thus, the “phrase ‘substantially perpendicular’ envisions some amount of deviation
 22 from” 90 degrees. *Parker Compound Bows, Inc. v. Hunter’s Mfg. Co., Inc.*, No.
 23 5:14CV00004, 2016 WL 617464, at *19 (W.D. Va. Feb. 12, 2016) (quoting *Anchor Wall*
 24 *Sys., Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1311 (Fed. Cir. 2003)).

25 As mentioned above, the assembly was designed to give surgeons flexibility when
 26 positioning the first and second members to secure fractures. (Doc. 60-2 at 13, 45:50.)
 27 Because a surgeon could position the second member at numerous angles, the second bore
 28 axis and third longitudinal axis might intersect in a manner that cannot be described as
 completely “perpendicular.” The axes would only be completely perpendicular if the

1 second member were placed into the second aperture at a 90-degree angle. However, by
 2 including the word “substantially,” Extremity indicated to POSITAs that the lines might
 3 intersect in more variable ways. *Parker Compound Bows, Inc. v. Hunter’s Mfg. Co., Inc.*,
 4 No. 5:14CV00004, 2016 WL 617464, at *19 (W.D. Va. Feb. 12, 2016) (“Here, the patentee
 5 plainly used the word ‘substantially’ to describe the relationship between two lines—i.e.,
 6 their perpendicularity or parallelity, as the case may be—in a way that does not require
 7 exactness.”).

8 Extremity also provided objective boundaries for understanding the phrase
 9 “substantial perpendicularity.” As mentioned above, the assembly allows surgeons to
 10 position the second member through the second aperture at various angles, depending on
 11 the nature of a given fracture. The angle at which a surgeon inserts the second member
 12 into the second aperture determines the position of the second bore axis. Thus, the degree
 13 to which the second bore axis and the third longitudinal axis intersect is also determined
 14 by the angle at which a surgeon inserts the second member, which is limited to “the range
 15 of about 0 degrees to about 90 degrees.” Thus, the degree of perpendicularity is also limited
 16 to this range, and the measurement is not “purely subjective.” *Niazi Licensing Corp. v. St.*
 17 *Jude Med. S.C., Inc.*, 30 F.4th 1339, 1348 (Fed. Cir. 2022).

18 Accordingly, “substantial perpendicularity” is not indefinite.

19 *3. Term Seven: “wherein there are no threads adjacent to the*
 20 *second aperture on the exterior surface of the third member”*

21 Finally, Fusion asks the Court to find Term Seven—“wherein there are no threads
 22 adjacent to the second aperture on the exterior surface of the third member”—indefinite.
 23 (Doc. 60-2 at 33, c.15, 19:21); (Doc. 60-2 at 33, c.16, 33:35.) Fusion alleges that the word
 24 “adjacent,” like the words “about” and “substantially perpendicular,” is a subjective term
 25 of degree. (Doc. 63 at 12.) Specifically, it alleges that a POSITA “would not be able to
 26 determine just how near the threads would have to be to the second aperture to fall within
 27 the scope of this phrase.” (*Id.*) Fusion further notes that it is also “unclear if there are no
 28 threads inside the second aperture, which is on the exterior surface of the third member, or

1 if there are no threads on the portion of the exterior surface of the third member that is
2 adjacent to the second aperture.” (*Id.*)

3 To start, courts routinely decline to construe “adjacent” in patent claims and afford
4 the word its conventional definition. *Webasto Thermo & Comfort N. Am., Inc. v. Bestop*
5 *Inc.*, No. 2:16-cv- 3456-PDB-RSW, 2018 U.S. Dist. LEXIS 218799, at *52-53 (E.D. Mich.
6 Nov. 29, 2018) (citing *GeoDynamics, Inc. v. DynaEnergetics US, Inc.*, No. 2:15-CV-1546-
7 RSP, 2016 U.S. Dist. LEXIS 147143, 2016 WL 6217181, at *6 (E.D. Tex. Oct. 25, 2016);
8 *Wise v. Techtronic Indus. Co.*, No. 8:10-3005-HMH, 2011 U.S. Dist. LEXIS 170195, at
9 *16 (D.S.C. Oct. 3, 2011) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir.
10 2005)). Fusion’s expert offered a definition that aligns with these decisions by testifying
11 that “adjacent to” means “alongside or tangent to.” (Doc. 68-3 at 25, 13:14.) This
12 definition is sufficient to inform “with reasonable certainty, those skilled in the art about
13 the scope of the invention,” *Nautilus*, 572 U.S. at 901, although it does not define the
14 absence of threads with “absolute or mathematical precision.” *BASF Corp. v. Johnson*
15 *Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017).

16 Fusion’s argument that “there are two possible locations where there could be no
17 threads” does not change this conclusion. (Doc. 68 at 15.) Under the definition offered by
18 its expert, Term Seven cannot plausibly suggest that “there are no threads inside the second
19 aperture.” Put simply, “alongside or tangent to” means “next to” not “inside of.” Further,
20 the 166 Patent’s specification unambiguously states that the third member’s hollow base
21 “has a smooth exterior.” (Doc. 60-2 at 32, 13, 3537.) Thus, there is no legitimate confusion
22 about where there are no threads.

23 Accordingly, the Court will not find Term Seven indefinite and will not construe
24 “adjacent to.”

25 CONCLUSION

26 For the preceding reasons, the claims are construed under *Markman v. Westview*
27 *Instruments, Inc.*, 517 U.S. 370 (1996), as specified below.

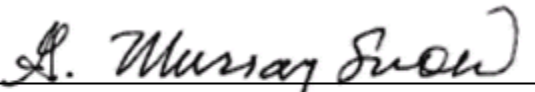
28 **IT IS HERBY ORDERED** that “a third member comprising a third elongated body

1 extending along a straight line from a first end to a second end along a third longitudinal
2 axis” is construed as “wherein the [third] member extends along a straight line from a first
3 end to a second end.”

4 **IT IS FURTHER ORDERED** that no construction is necessary for any other
5 terms, and they will be understood according to their plain and ordinary meanings.

6 **IT IS FURTHER ORDERED** that Defendant’s Motion for Leave to File Sur-
7 Reply Regarding Claim Construction (Doc. 70) is **DENIED**.

8 Dated this 7th day of July, 2023.

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10 
11 G. Murray Snow
12 Chief United States District Judge
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